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ABSTRACT

The relationship between college grades and achievement of college graduates was studied at Winona State University, Minnesota. The following criteria for investigating this relationship were assessed: quality of vocational achievement, acceptance of responsibility in social groups, and further intellectual development. These criteria were specified in behaviors that were incorporated into a questionnaire. For the 575 subjects, attention was directed to the relationship between earning an advanced academic or professional degree and undergraduate grades; a comparison of income levels and undergraduate grade point averages for 6 groups of graduates; the extent of involvement in community and cultural activities in relation to undergraduate grade point averages of graduates; and the relationship between grades and political activities of females. The only findings that reached statistical significance were a negative relationship between undergraduate grade point average and the extent of involvement in community activities for male graduates. Those with higher grades were less likely to assume major social responsibilities in their communities. A similar study of graduates of the University of Iowa also found that those with higher grades were involved in fewer community activities than those with lower grades. However, for the Iowa group, those earning advanced degrees earned significantly higher grades when compared with other Iowa graduates not earning these degrees. This difference between the two schools may result from the fact that the majority of Winona graduates earned advanced degrees in education at schools primarily serving undergraduate students, while a larger percentage of the Iowa graduates probably entered professional and graduate programs at graduate-level institutions. (SW)

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THE RELATIONSHIP BETWEEN COLLEGE GRADES AND ADULT ACHIEVEMENT RECONSIDERED

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THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Second Annual Forum of the Association for Institutional Research held at the Denver Hilton Hotel in Denver, Colorado, May 16-19, 1982. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

D. R. Coleman, Chairman
Forum Publication
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ABSTRACT

Previously reported studies on the relationship of college grades with adult achievement focused on the single criterion of ratings of job success and generally reported no statistically significant findings. This study was based on the logic that the criteria for investigating this relationship should include a variety of behaviors, each seen as reflecting on the general goals of higher education. Suggested criteria were quality of vocational achievement, acceptance of responsibility in social groups, and further intellectual development. Data for this study were taken from a sample of 527 male and female graduates of Winona State University. The only finding that reached statistical significance was a negative relationship between undergraduate G.P.A. and extent of involvement in community activities for the male graduates. Comparisons of achievement on the other criteria for graduates with various levels of undergraduate G.P.A. did not yield differences significant at the .05 level. These findings were related to those obtained from a similar study of graduates from the University of Iowa.

A common element in the conversations among college and university faculty members is the hard and f rustrating work of grading the students. It is a very time-consuming and difficult task as it involves the writing of objective test itmes and/or the seemingly endless time needed to read essay examinations. And after it all, most faculty members in small colleges and universities have the clerical work of recording scores, making distributions, and then, the difficult decisions of drawing the lines between letter grades. It is generally agreed upon as the most distasteful part of the job. If this task is so foreign to the rather romantic role envisioned for the college instructor, why does it exist? The best single answer to that question is that most people see it as a ncessary part of the educational process since these grades are judged to represent different levels of attainment of curricular objects and this attainment, in turn, suggests different levels of achievement in the world beyond the walls of the college.

But many have questioned these assumptions over the years. They ask the basic question--"Do these grades really mean anything?" In other words, do these grades earned in college which signify the level of knowledge of mastery of subject matter have any correspondence with major achievements and events in the lives of graduates after they complete their programs of study and leave the college? This paper will focus on that very basic question.

Section II: Reivew of Related Research

This review section will focus on two major works related to this topic. The first significant effort was the report issued in 1965 by the American College Testing Program entitled, "The relationship between college grades and adult achievement. A review of the literature" (Hoyt, 1965). This was a review of all known research (46 studies) on the relationship betwen college grades and adult achievement. Each of the studies was considered individually

with a brief comment reflecting an evaluation of the study. The conclusion reached from this review, stated in a brief summary, said "present evidence strongly suggests that college grades bear little or no relationship to any measure of adult accomplishment." The author of the report then suggested ways to improve the evaluation and selection procedures in higher education on the assumption that the conclusion of no relationship was final.

However, there are flaws in the logic and methods used in these studies which put limitations on that conclusion. The first issue, and probably of most significance, was that practically all of the data reported was derived from the study of relationships between college grades and the single criterion of a measure of job success, usually a rating score. Hence, the conclusion from the review should have reflected the finding of no consistent significant relationship between college grades and ratings of job success, not adult accomplishment as a generalized concept. From the standpoint of academic logic, most educators would not limit the goals of higher education to occupational success. Consequently, most of the stated goals of most colleges and universities are not limited to this one outcome. Granted, occupational success certainly has a significant place among the overall goals of college or university education, but we should not limit our inquiry to that one aspect of adult behavior.

A methodological problem with the majority of the studies in the Hoyt review as the manner in which the relationships were established between grades and achievement. Grades earned were simply correlated with ratings. There was neglect for the fact that a major purpose of undergraduate grades is to serve as a criterion for determining admission into most graduate and professional schools. Thus, there may not be a significant correlation between grades and ratings of job success for lawyers, graduate degree engineers, or medical doctors, but there certainly may be a significant difference between the

Undergraduate grades of those who are admitted into training programs for these professional occupations and those who are not.

The second major study relevant to this paper was the survey of 18[illegible] graduates from the University of Iowa College of Liberal Arts (Lewis, 1969). This study was based on the logic that attainment of behaviors relevant to the goals of the University's College of Liberal Arts should be used as the measuring stick of the Liberal Arts Graduates' achievements in life. Three areas of behavior were delimited from the stated goals of the College of Liberal Arts. They were:

1. Quality of vocational achievement such as level of income or type of the graduate's occupation, and extent of post-graduate academic and professional training.
2. Acceptance of responsibility in social groups consisted of involvement in political and community activities.
3. Further intellectual development focused on cultural and intellectual activities.

An investigation of the relationship between undergraduate grade point average and the attainment of those behaviors was included in the Iowa study. As a consequence of the procedures used in conducting this survey, the subjects were devided into four groups (two male and two female groups) with the results analyzed separately for each of those groups.

For the quality of vocational achievement outcome, non-significant relationships were fo-nd for level of income and undergraduate G.P.A. for both female subject groups and for one of the two male subject groups. However, in one of the male groups, those with higher grades reported significantly higher incomes. Significant differences also appeared when both samples of male graduates were compared according to level of occupation. For these male Iowa

graduates, those with higher level jobs had earned significantly higher grades as undergraduate students. For the employed female graduates, non-significant differences appeared. Finally, graduates of both sexes who earned advanced degrees had significantly higher mean undergraduate grade point averages when compared with those whodid not enter graduate or professional school or did not complete advanced degrees.

When the Iowa graduates were studied according to the two dimensions of acceptance of responsibility in social groups, the findings showed that male graduates with higher grades reported involvement in fewer community activities when compared with male graduates with lower grades. That is, an inverse relationship appeared between grades and involvement in community activities among the male graduates. Non-significant differences appeared for the female Iowa graduates. In terms of political activities, undergraduate grades were not found to be associated with responding positively to any of the listed activities on the questionnaire for any of the four samples of graduates.

Mixed results appeared when the mean undergraduate grade points of graduates were compared according to extent of involvement in cultural activities. For one of the male groups, those with higher grades reported participation in more cultural activities. This positive relationship did not appear, however, for the other male group nor for the two female groups.

The results of the Lewis study to suggest that grades earned as undergraduate students may be related to behaviors seen as the goals of colleges and universities. The purpose of the current study was to determine if similar relationships would appear for graduates from a different institution with data collected at a different point in time.

Section III: The Method

The first step was to establish a logic for determining attainment among the graduates. As was noted in the review of related research sections, the

first major previous report on this topic - the Hoyt review - focused on job rating as a single measure of alumni achievement. The second study - the Lewis study - focused on a variety of behaviors seen as relevant to the objectives of higher education. The latter three criteria - quality of vocational achievement, acceptance of responsibility in social groups, and further intellectual development - were used for the current investigation.

The second step was to delimit these three objectives into specific behaviors and then form questionnaire items relevant to these behaviors. The completed questionnaire schedules and corresponding cover letters were mailed to all graduates (14,000+) of Winona State University. Returns were obtained from 4,661 of these graduates.

Finally, a random sample of 575 was selected for investigating the relationship of undergraduate grades earned at Winona State University with the quality of vocational achievement, further intellectual development, and involvement in community activities outcomes. Since a small number of graduates (N = 109) reported involvement in listed political activities, that total group was used in the data analysis.

Undergraduate grade point averages for the subjects were taken from the official transcripts in the registrar's office at Winona State University. They were recorded on a 5-point scale (4 = A, 3 = B, 2 = C, 1 = D, and 0 = E).

Results

The first task was to determine if those who reported earning an advanced academic or professional degree achieved higher grades as undergraduates at Winona State Univesity when compared with their fellow students who reported a B.A. or B.S. as their most advanced degree. It should be noted that earning advanced certifications in professional areas of teaching, such as learning disabilities, did not qualify as an advanced degree. This comparison by sex groups is presented in Table 1.

It can be seen that 96 or 34% of the sampled males reported earning an advanced degree. As undergraduate students, they achieved a mean G.P.A. of 2.73. The 198 males who did not complete an advanced degree had an average undergraduate G.P.A. of 2.65. The difference of .08 yielded a 't' value of 1.50 which did not reach the .05 level of statistical significance. Thus, among those males returning the survey, significant differences did not appear in grades earned as undergraduates when those who reported earning an advanced degree were compared with those with B.A. or B.S. as their final degree.

A similar non-significant difference appeared for the females sampled. The mean undergraduate G.P.A. for those completing an advanced degree was 3.03 compared with 2.97 for those not completing graduate degrees. The difference of .06 yielded a 't' ratio of only .63.

These results stimulate some interesting reflections about male-female behaviors in our society. It was previously observed that 34% of the males reported earning an advanced degree and they had an undergraduate G.P.A. of 2.73. Only 35 or 12% of the females reported earning an advanced degree and they had an undergraduate G.P.A. of 3.03. In addition, the G.P.A. of the females not earning an advanced degree was 2.97 or .24 higher than the males who did earn an advanced degree. These data certainly support those who argue that bureaucratic, psychological, and sociological factors are probably stronger motivational forces than undergraduate grades earned for determining the percentages of males and females that make an effort to advance through the academic and professional world.

The comparison of income levels by undergraduate G.P.A. for sex groups of Winona graduates is shown in Table 2. Different categories for grades and income were used for males and females. This was a consequence of the higher grades earned by the females, and interesting to observe, lower incomes!

Non-significant differences were found when graduates of either sex were compared on income and undergraduate G.P.A's. Thus, the results of this study would support the argument that in our society, the rewards for excellence in academic endeavors must lie outside those elements obtainable through financial gain alone.

The comparison of extent of involvement in community activities for graduates of either sex withvarious levels of undefgraduate grades can be seen in Table 3. Since the responses for the two sex did not appear to differ by a large amount, similar categories for activity levels were used. References to Table 3 reveals that non-significant differences for female graduates appeared when the total graoup was considered. However, reference to the four or greater number of community activities for female Winona graduates reveals a percentage of 34% for female graduates with a G.P.A. of 2.75 or less and a percentage of 17% for those with a G.P.A. of 3.51 or greater. The difference in these two proportions yielded a chi-square value of 14.5 which was statistically significant at the .001 level.

For male Winona graduates, statistically significant differences were found. Most interesting was the large percentage difference in the four or greater number of community activities. For those with G.P.A.'s of 2.50 or less, 45% reported involvement in this relatively large number of community activities. However, only 17% of the males with G.P.A.'s in the 3.26 or greater range reported this high level of involvement. Thus, the findings suggest that grades earned as undergraduates at Winona State University were inversely related to extent of community involvement among male graduates. Those with higher grades were less likely to assume major social responsibilities in their communities.

The comparison for the extent of participation in listed cultural activities is shown in Table 4. For this outcome, similar categories were used for the two sexes. Non-significant differences were found for both sexes that

those with different undergraduate grades were compared in terms of the number of cultural activities in which they participated. Thus, for graduates of this institution, grades earned were not related to later participation in those activities considered to be of a cultural nature.

Finally, the findings for the investigation of the relationship between grades and responding "yes" to at least one political activity for female graduates is shownin Table 5. These data are not presented for male graduates because the mean G.P.A. for the male political participants was 2.65 which was identical to that found for males with only a B.A. or B.S. degree and only .03 from the male total group mean G.P.A. of 2.68. Thus, tests of significance were not conducted.

An examination of the results for the female graduates shows that those who participated in at least one of the listed political activities had a mean G.P.A. of 3.15 which was .17 higher than the overall female mean of 2.98. However, this difference yielded a non-significant 't' value ($t = 1.55$; p .05).

Discussion

The meaning of these findings is best projected when one compares them with those reported from the study of Iowa alumni reviewed earlier in this paper. First, major differences appeared between the results of the two studies. The most noteworthy was the relationship of G.P.A. to the earning of advanced degrees. Among Iowa graduates, those earning advanced degrees earned significantly higher grades when compared with other Iowa graduates not earning these degrees. This difference was not found for the Winona graduates. The most likely explanation for this difference would be in the nature of the degrees sought by the Winona graduates. While an exact tally was not maintained, it is hypothesized that the majority of Winona graduates earned advanced degrees in education at institutions primarily serving undergraduate students. A larger percentage of the Iowa graduates probably entered professional and graduate programs at graduate level

institutions. The difference in the nature of this relationship between these two groups of college alumni certainly supports the argument that institutions of higher learning differ, the students attending them amy differ, and that generalizations gained from the study of alumni from one institution may indeed not apply to those from a second institution.

The one similarity is bothersome. For both groups of male alumni, those with higher grades reported involvement in fewer community activities. Yet, these high achievers, in terms of grades, did not report participation in more cultural activities.

The final question remains. Did earning these higher grades enrich the lives of these high-achieving graduates? If so, how? For the Winona graduates, the only major finding was that they participated in few community activities!

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Table 1

COMPARISON OF MEAN UNDERGRADUATE G.P.A.

ACCORDING TO FINAL ACADEMIC DEGREE BY SEX

		n	$\bar{x}$	s	d	t
Females	Adv. Degree	35	3.03	.48	.06	* .63
	B.A. Only	246	2.97	.52		
Males	Adv. Degree	96	2.73	.42	.08	*1.50
	B.A. Only	198	2.65	.45		

*Not significant at the .05 level.

Table 2

COMPARISON OF INCOME LEVELS BY UNDERGRADUATE G.P.A.

FEMALES

Income Level	2.75 or Less	2.76 - 3.50	3.51 or Greater
10,000 or Less	34	42	33
10,000 - 15,999	48	38	44
16,000 or Greater	18	21	23
N	96	116	48

MALES

Income Level	2.50 or Less	2.51 - 3.25	3.26 or Greater
10,000 - 15,999	21	30	39
16,000 - 24,999	51	43	42
25,000 or Greater	28	27	18
N	108	143	33

X^2(Females) = 3.07 df = 4 $p > .05$
X^2(Males) = 5.29 df = 4 $p > .05$

Table 3

COMPARISON OF EXTENT OF INVOLVEMENT IN

COMMUNITY ACTIVITIES BY UNDERGRADUATE G.P.A.

FEMALES

Number of Activities	2.75 or Less	2.76 - 3.50	3.51 or Greater
0-1	25	30	34
2-3	42	41	49
4 or Greater	34	29	17
N	101	127	53

MALES

Number of Activities	2.50 or Less	2.51 - 3.25	3.26 or Greater
0-1	26	24	31
2-3	29	32	52
4 or Greater	45	44	17
N	114	144	35

X^2 (Females) = 5.2 df = 4 $p > .05$

X^2 (Males) = 10.98 df = 4 $p < .05$

Table 4

COMPARISON OF EXTENT OF PARTICIPATION IN

CULTURAL ACTIVITIES BY UNDERGRADUATE G.P.A.

FEMALES

Number of Activities	2.75 or Less	2.76 - 3.50	3.51 or Greater
0-1	32	28	28
2-3	34	33	30
4 or Greater	35	39	42
N	101	127	53

MALES

Number of Activities	2.50 or Less	2.51 - 3.25	3.26 or Greater
0-1	46	46	40
2-3	38	35	34
4 or Greater	30	19	26
N	114	144	35

X^2(Females) = 1.02 df = 4 $p > .05$

X^2(Males) = 1.46 df = 4 $p > .05$

TABLE 5

COMPARISON OF UNDERGRADUATE G.P.A. ACCORDING TO INVOLVEMENT IN POLITICAL ACTIVITIES FOR FEMALE GRADUATES

	N	$\bar{X}$	S	d	t
Pol. Act.	21	3.15	.45	.17	*1.55
No Pol. Act.	281	2.98	.50		

* Not significant at the .05 level